CANADA

NATIONAL ENERGY BOARD
REASONS FOR DECISION

In the Matter of

Shell Canada Limited

GH-2-86

Application for a Gas
Export Licence

November 1986

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Table of Contents

RECITAL AND APPEARANCES

IN THE MATTER OF the National Energy Board Act and the Regulations made thereunder; and

IN THE MATTER OF an application by Shell Canada Limited pursuant to Section 82 of the National Energy Board Act and Section 4 of the National Energy Board Part VI Regulations for a licence authorizing the export of natural gas, filed with the Board under file no. 1537-S5-1.

HEARD in Ottawa, Ontario on: 7 October 1986.

BEFORE:

R. Priddle	Presiding Member
A.D. Hunt	Member
R.B. Horner, Q.C.	Member

APPEARANCES:

L.E. Smith R. Riegert	Shell Canada Limited
J.R. Smith, Q.C.	Alberta and Southern Gas Co. Ltd.
B.L. Webb	Alberta Northeast Gas, Inc.
J.H. Farrell	The Consumers' Gas Company Ltd.
J. Lutes	Foothills Pipe Lines (Yukon) Ltd.
R. Meunier	Gaz Métropolitain, inc.
T.F. Brosnan	Granite State Gas Transmission, Inc.
D.L. Bews	Mobil Oil Canada, Ltd.
C.K. LaPièrre	Montreal Pipe Line Limited
M.J. Veniot, Q.C. J.D. French	Nova Scotia Resources Limited
G. Giesbrecht	Pan-Alberta Gas Ltd.
K.J. MacDonald	ProGas Limited
N.J. Schultz H. Soloway, Q.C. E.B. Abbott	Tennessee Gas Pipeline Company, A Division of Tenneco Inc.
C.C. Black	TransCanada PipeLines Limited
J.T. Schoenmakers	Union Gas Limited
D.C. Edie	Alberta Petroleum Marketing Commission
J.N. Pounder C. McCue	Minister of Energy for Ontario
J. Giroux	Procureur général du Québec
D. Tremblay	National Energy Board

Chapter 1
Background

By application dated 5 June 1986 Shell Canada Limited (Shell) requested National Energy Board (Board) approval of a licence to export natural gas. Shell requested that the Board give early consideration to its application in order to allow for the timely construction of pipeline facilities and in order to meet other conditions precedent contained in various related sales and transportation agreements.

The Board found Shell's request for expedited treatment to be reasonable and in its Hearing Order, GH-2-86, established a timetable that reflected this requirement. The hearing was held in Ottawa, Ontario on 7 October 1986.

Twenty-seven parties filed interventions; of these 17 appeared at the hearing, although none presented evidence. During the proceeding six parties, other than the Board, conducted cross examination and four parties, other than Shell, presented final argument. None of the foregoing opposed Shell's application.

This report constitutes the Board's Reasons for Decision. Chapter 2 describes the application; Chapter 3 sets out the Board's reasons; Chapter 4 contains the decision.

Chapter 2
The Application

By its application dated 5 June 1986 Shell sought Board approval of a licence to export gas at Highwater, Québec and Niagara Falls, Ontario. The United States customer, Granite State Gas Transmission Inc. (Granite State), is an interstate pipeline and intends to resell the gas to two local distribution companies, Bay State Gas Company (Bay State) and Northern Utilities Inc. (Northern). The gas would be consumed in the states of Massachusetts, Maine and New Hampshire.

The gas to be exported at Highwater, Québec would be transported to the international border through a converted section of the Portland-Montreal oil pipeline. The application to convert this oil line and the lease thereof is the subject of a separate application by Shell dated 9 July 1986, which is being dealt with by the Board.

Shell applied for a licence with the following terms and conditions:

Term	- 1 November 1987 to 31 March 1999 (11 years and 5 months)
Maximum Daily Quantity	- Highwater, Québec 1 110 thousand cubic metres Niagara Falls, Ontario 1 390 thousand cubic metres
Maximum Annual Quantity	- Highwater, Québec 300 million cubic metres Niagara Falls, Ontario 400 million cubic metres
Maximum Term Quantity	- 7 100 million cubic metres

Chapter 3
Reasons for Decision

3.1 Issues Considered by the Board in Reaching Its Decision

In its review of the Shell application, the Board had to consider whether the surplus and deliverability for future years would be adversely affected; whether or not the market area to be served offered adequate growth potential for the proposed export sale; what, if any, impact the Board's decision could have on required pipeline facilities; and whether any positive economic benefits would accrue to Canada in the event that the licence was granted and exports took place.

3.1.1 Supply

Shell provided reserves estimates for those fields from which it intends to produce the natural gas for this export. For comparative purposes the Board prepared its own estimate of the reserves in question. Table 1 shows that the Board's estimate is less than Shell's and the Board notes that the difference is caused by the use of different reservoir areas in the reserves calculations for individual pools. Given this, and the fact that Shell had stated that it is actively exploring for and developing new reserves in western Canada which could be used to supplement the reserves dedicated to this export sale, the Board is satisfied that the necessary supply to support the project is or will be available.

Table 1
Summary Comparison of Shell and NEB Reserves

Field	Remaining Established Reserves (10^6m^3)	
	SHELL	**NEB**
Hamburg	3 730	1 599
Panther River	2 586	2 334
Progress/Pouce Coupe South/ Gordondale Area	2 695	1 848
Total	**9 011**	**5 781**

The Board notes that the Applicant holds a gas removal permit from Alberta for 7 420 million cubic metres which is adequate to meet the supply requirements for the proposed export sale.

3.1.2 Natural Gas Surplus and Deliverability

As noted in its letter dated 11 August 1986, attached to Hearing Order GH-2-86, the Board did not consider that an in-depth review of surplus was necessary and none was conducted. However, the Board is satisfied that, for the reasons described in the above-noted letter, adequate surplus does exist for this project.

With respect to the question of deliverability, Shell submitted evidence which showed that gas for the export would come from properties which it controlled and would be supplemented initially by gas from Alberta and Southern Gas Co. Ltd. and from Pan-Alberta Gas Ltd. In this regard, the Board is satisfied that Shell will have adequate deliverability to meet its requirements.

3.1.3 Pipeline Facilities

Under the Applicant's export proposal, the gas would be transported from the Shell properties in Alberta, through the system of NOVA, AN ALBERTA CORPORATION to an interconnection with TransCanada PipeLines Limited (TransCanada) at the Alberta/ Saskatchewan border. From there the gas would be delivered by TransCanada to Gaz Métropolitain, inc. (GMi) at Sabrevois, Québec for delivery to Shell Canada Products Limited (Shell Products) at Brigham, Québec.

Shell Products would transport the gas from this point to the international border near Highwater, Québec through an oil pipeline leased from Montreal Pipe Line Company Limited (MPL). These presently unused MPL facilities are to be converted to transmit natural gas.

The Shell proposal requires the conversion to gas service of the MPL 457 mm crude oil pipeline. This would leave only the MPL 610 mm pipeline for crude oil service, to provide up to 58 800 cubic metres per day of

crude oil to two Montreal refineries. The combined capacity of these two refineries, which as well receive domestic crude oil via Interprovincial Pipeline Ltd., is approximately 33 400 cubic metres per day. Therefore, adequate crude oil pipeline capacity would remain available to serve the Montreal refineries, even if they were to be supplied entirely by MPL's 610 mm pipeline.

No expansion on the GMi pipeline link between Sabrevois, Québec and Brigham, Québec would be necessary. However, a pressure-reducing and line-heating facility at Brigham would be required as well as a custody transfer meter at the international boundary.

3.1.3.1 Requirement for Additional Facilities

Additional facilities would be required both on TransCanada's system and on the Union Gas Limited (Union Gas) system. On the TransCanada system an additional 1 MW compressor would need to be installed at station 802. The estimated cost of this unit is $3 million. The necessary expansion on the Union Gas system to accommodate this export sale was estimated to cost $12 million.

In the event that certain of TransCanada's existing domestic customers were to convert from short-term purchase arrangements to long-term contracts, then, in addition to the above-noted facility expansion requirements, TransCanada would also be required to add a few kilometres of loop on its Vermont line.

The Board is of the view that existing facility capacity, coupled with the proposed facility expansion, would provide adequate capacity to transport the Shell export quantities to Highwater, Québec. Furthermore, the Board finds that the cost estimates for the required facility expansion, as submitted by the Applicant, are reasonable.

3.1.3.2 Requirement for Two Export Points

Shell has requested that its export licence include authorization to export gas to Granite State both at Highwater, Québec and at Niagara Falls, Ontario. The reason for this is the existence of a transportation bottleneck in the United States on the Granite State transmission system. The bottleneck consists of a section of 8-inch transmission line running south from Portland, Maine. Although the Highwater, Québec facilities are capable of transporting nearly all of the quantities of gas applied for, these quantities could not be moved beyond the Portland, Maine market area because of the pipeline restriction. The bottleneck effectively divides the Granite State system into two separate halves; thus the need for the two different export points.

3.1.4 Markets

An applicant for an export licence is required to demonstrate that the market it intends to serve offers reasonable potential for growth and the ability to absorb the gas proposed for export. In this regard, Shell provided evidence as follows.

3.1.4.1 Market Potential

Shell stated in its application that its exports to Granite State would be required for resale to Bay State Gas Company (Bay State) and Northern Utilities Inc. (Northern). Bay State serves a large number of Massachusetts communities while Northern serves areas of Maine and New Hampshire. Shell outlined that Bay State's and Northern's gas requirements were forecast to increase from 48.5 Bcf during the 1984/85 contract year to approximately 71.0 Bcf during the 1987/88 contract year. About one-quarter of the forecast increase in demand is for firm gas requirements while three-quarters of the additional demand is for interruptible industrial and dual-fired electrical generation accounts. Shell indicated that although Bay State's and Northern's requirements are forecast to increase almost 50 percent by 1987/88, the supplies which these companies will have pursuant to long-term contracts with U.S. suppliers will remain fairly constant at approximately 46 Bcf per year. The short-fall of about 24 Bcf will be largely made up by the Shell exports.

Shell indicated that for the year ending 31 August 1986 residential account gains totalled about 6 000 and that commercial sales had increased over 9 percent. More importantly, Shell outlined that the dual-fired electrical generation accounts targeted by Bay State and Northern were among those having the highest operating efficiencies in the New England area and that as such, these units would be among the first units utilized by the electrical utilities. Shell noted that its export licence would provide Bay State with adequate gas supplies to permit expansion of its distribution system to fire key existing electrical generation accounts for the Massachusetts Municipal Wholesale Electric Company. Shell also stated that if gas were competitively priced it would be used by the electrical generation accounts at fairly high load factors.

With respect to the question of the availability of spot gas in this market area from United States suppliers, Shell stated that almost 20 percent of Granite State's annual supplies were made up of short-term spot gas purchases during 1984/85. In this regard Shell said that the interruptible industrial and electrical generation markets were only opportunities at this time and that Bay State and Northern would be required to provide gas as the least cost alternative fuel to secure these markets.

In this regard, Shell noted that Granite State had negotiated its contracts, similar to its other long-term contracts, so as to include market-sensitive pricing terms and conditions. As well, the Applicant noted that for sales in Massachusetts, Maine and New Hampshire, the utilities were permitted to allocate the full cost of all demand charges associated with the purchase of long-term supplies with their firm customers and allocate the commodity cost to both the firm and interruptible customers in direct proportion to the actual volumes that flow to the respective markets. Shell stated that, given this rate structure and the fact that Shell's exports to Granite State would be market sensitive, there was reasonable assurance that the proposed exports would materialize and would compete against other energy supplies. Shell also indicated that the spot gas market in the United States was based on a level of surplus deliverability that would probably decline considerably by the time its exports were to commence in the 1987/88 contract year.

The Board concludes that the proposed Shell exports are feasible given the nature of the demand/commodity pricing methodology permitted Granite State's U.S. customers and the market sensitivity provided for in the export contract. The Board notes, however, that the majority of Bay State's and Northern's forecast of market additions to 1987/88 are in the interruptible market. Thus Shell's exports will, to some extent, continue only so long as the gas remains the least-cost energy source for Bay State's and Northern's interruptible industrial and electrical generation customers.

3.1.5 Sales Contracts and Pricing Matters

In support of its application, Shell filed an executed gas sales contract dated 25 June 1986 for sales at Highwater, Québec and a Precedent Gas Purchase Agreement dated 25 September 1986 for sales at Niagara Falls, Ontario. Both contracts are with Granite State.

The contract for sales at Highwater, Québec utilizes a demand and commodity pricing structure, thereby ensuring recovery of all Canadian fixed costs as well as providing a commodity price that will be market sensitive. The contract also provides that the price paid will not be less then any applicable reference price paid by Canadians in the areas adjacent to the export points. Shell stated that its Niagara Falls, Ontario contract would contain similar conditions.

With respect to the market sensitivity of the commodity price, the contract includes a provision whereby the commodity price is indexed to alternative energy prices available in the market area.

As noted earlier, the Board is of the view that the operation of the sales contracts to provide market sensitive pricing will ensure a reasonable sales level. At the same time the Board is aware that the contracts themselves provide that the existing export pricing criteria with respect to cost recovery and minimum price requirement will be met. The Board is satisfied with the form and content of the export sales contracts.

3.1.6 United States Transportation Arrangements

The proposed exports at Highwater, Québec are to be transported through a presently unused portion of the Portland oil pipeline in the United States which will be converted from oil service to transmit gas. This pipeline will interconnect with the facilities of Granite State.

With respect to its proposed exports at Niagara Falls, Ontario, Shell stated that it expects to transport gas on an interruptible basis through the facilities of Tennessee Gas Pipeline Company (Tennessee). This gas would be transported to the Penn/York storage areas in the states of Pennsylvania and New York during off-peak periods only.

Shell indicated that it would undertake to contract for firm transportation for its Niagara Falls, Ontario sales with Tennessee or with whichever company gains certification to build the necessary facilities in the United States.

3.1.7 Status of United States Regulatory Approvals

Shell stated that the application to convert the Portland Pipeline in the United States from oil to gas is nearly completed. As well, Granite State's application for import authorization has been filed with the Economic Regulatory Administration. Several minor permits are required from Maine, Massachusetts and New Hampshire with respect to financing approvals, lease permits and asset transfers. Shell outlined that the Shell/Granite State export proposal was supported at the NEB's hearing by the New England Public Utilities Commission and the office of the Energy Secretary for Massachusetts.

3.1.8 Cost-Benefit Analysis Summary

The Applicant provided a social cost-benefit analysis of the proposed export sale from the perspective of Canada as a whole. Consequently, the net benefits of the project were estimated on a social rather than a private basis. The approach taken in the analysis was to project annual revenue and cost streams, and to apply an adjustment wherever a difference between

private and social costs could be identified and quantified. In particular, adjustments were made to account for differences between the private and social opportunity costs of labour and foreign exchange. Additionally, the "user costs" attributable to the project were included in the analysis. These arise because new exports necessitate the development of more expensive gas reserves to meet domestic requirements and export demand under existing licences sooner than would be the case in the absence of additional exports.

According to the analysis submitted by the Applicant, the project is expected to yield net benefits of approximately $300 million (present value 1986 $) to Canada.

Based on the evidence submitted by the Applicant and on its own analysis, the Board's finding is that there is a high degree of certainty that the export project will yield positive net benefits to Canada. Although the net benefits of the project, as estimated in the analysis, were overstated to the extent that additional facilities might be required to accommodate firm deliveries at Niagara Falls, the Board is of the view that the benefits of the project will substantially outweigh the costs. Consequently, it can be concluded that the project will yield net benefits to Canada.

Chapter 4
Disposition

The Board has decided to issue a gas export licence to Shell. The new licence will include the requested terms and conditions with respect to maximum daily and annual authorization, term quantity and licence term. However, the Board has decided to include in the licence a condition which will require that export sales under the licence must start before 1 November 1990. Once this condition has been met the licence will be automatically extended to the applied-for expiry date of 31 March 1999. Should the condition not be met, the licence will terminate on 31 October 1990. The Board notes that approval of the new licence is required by the Governor in Council to implement this decision.

The Board's decision took into account a number of issues. Included was the question of supply under contract and whether adequate deliverability exists to accommodate the proposed export sale. In this regard the Board was satisfied that Shell had available to it adequate supply either by its own production or through purchases from others. Similarly the Board is of the view that deliverability requirements will be met throughout the term of the licence.

With respect to pipeline facilities, the Board found that the proposed transportation routes, either through existing or additional facilities, would not interfere with Shell's ability to market its gas. Insofar as additional facilities are concerned, the Board considered that the capital cost estimates for these facilities were reasonable and do not detract from the project economics.

The Board also considered the marketability of the proposed export and is of the view that, given the market pricing sensitivity of the sales contract and the Applicant's ability to meet the requisite pricing criteria, there is a reasonable assurance that the gas under contract will be taken. In addition, the Board is satisfied that growth potential does exist in this market area in both the firm sales category, as represented by the residential and commercial segment, and for interruptible sales to electric generation plants.

Finally, the Board is of the view that, based on the cost-benefit analysis performed by Shell and on the Board's own analysis, there is a high degree of certainty that the Shell project will yield net benefits to Canada.

R. Priddle
Presiding Member

A.D. Hunt
Member

R.B. Horner, Q.C.
Member

Ottawa, Canada
November 1986

News Release

National Energy Board
Ottawa, Canada, K1A 0E5

86/80
FOR IMMEDIATE RELEASE
November 27, 1986

NEB GRANTS NEW GAS EXPORT LICENCE TO SHELL

OTTAWA - Shell Canada Limited has been granted a new licence by the National Energy Board to export natural gas to Granite State Gas Transmission Inc. for distribution in Massachusetts, Maine and New Hampshire.

In making its decision, which followed a public hearing held in October 1986, the Board noted that an adequate surplus of natural gas exists to permit the export. In the Board's view, markets in Massachusetts, Maine and New Hampshire offer reasonable opportunities for growth and the export sales will yield net benefits to Canada.

The new licence provides for exports of up to 7.1 billion cubic metres (250.6 billion cubic feet) of natural gas at Niagara Falls, Ontario and Highwater, Québec, between November 1, 1987 and March 31, 1999. Gas exports must begin by October 31, 1990 or the licence will automatically be terminated.

In Canada, the gas will be transported by TransCanada PipeLines Ltd. from the Alberta border to Niagara Falls, Ontario and to Sabrevois, Québec. From this point, the gas will be carried by Gaz Métropolitain, inc., to an existing unused oil pipeline near Brigham, Québec for ultimate delivery to Highwater, Québec. A related application by Shell and Montreal Pipe Line Co. Ltd., dated July 9, 1986, to convert this section of the Portland-Montreal pipeline from oil to natural gas service is currently being dealt with by the Board.

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In the United States, the gas will be transmitted by Granite State to Bay State Gas Co. for resale in Massachusetts and to Northern Utilities Inc. for resale in Maine and New Hampshire. The export will be used to supply gas to residential and commercial users and to electric power plants and large industrial users.

- 30 -

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News Release

National Energy Board
Ottawa, Canada, K1A 0E5

86/82
FOR IMMEDIATE RELEASE
November 26, 1986

NEB TO HEAR APPLICATION BY PROGAS TO EXPORT NATURAL GAS TO OCEAN STATE POWER

OTTAWA - The National Energy Board will hold a public hearing in Calgary, Alberta on an application by ProGas Ltd. for a licence to export natural gas to Ocean State Power, a Massachusetts partnership.

The hearing will begin at 9:00 a.m. on Wednesday, January 7, 1987 at the Palliser Hotel, 133 Ninth Ave. S.W., Calgary.

In its application dated September 26, 1986, ProGas proposes to export about 517 million cubic metres (18.2 billion cubic feet) of natural gas per year at Niagara Falls, Ontario between May 1, 1989 and November 1, 2009. Ocean State Power would use the gas volumes to fuel a new generating plant it is proposing to build in Burrillville, Rhode Island.

The gas would be transported by TransCanada PipeLines Ltd. to the international border for delivery to Tennessee Gas Transmission Co.

Persons wishing to intervene in the public hearing or to comment on the application are required to file a written

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submission with the Board by Friday, December 5, 1986. The application is available for viewing in the Board's library in Ottawa and in Calgary, and at the ProGas offices in Calgary.

- 30 -

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For Directions on Procedures (GH-5-86) contact: Regulatory Support Office
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News Release

National Energy Board
Ottawa, Canada, K1A 0E5

86/79
FOR IMMEDIATE RELEASE
November 21, 1986

PROGAS AND WESTERN GAS MARKETING FILE APPLICATIONS FOR EXPORTS OF NATURAL GAS TO U.S.

OTTAWA - The National Energy Board has received applications by Western Gas Marketing Ltd. and ProGas Ltd. for export sales of natural gas to the United States.

In an application dated November 13, 1986, Western Gas Marketing Ltd., as agent for TransCanada PipeLines Ltd., is applying to export up to 11.3 billion cubic metres (400 billion cubic feet) of natural gas to Minnegasco Inc. via Emerson, Manitoba over a 10-year period, beginning November 1, 1987. Volumes purchased by Minnegasco would be primarily used in the company's distribution system in Minnesota.

In Canada, the gas would be transported by NOVA, An Alberta Corporation, to the Alberta/Saskatchewan border and TransCanada PipeLines Ltd. In the United States, the gas would be transported by Midwestern Gas Transmission Co.

In an application dated September 26, 1986, ProGas Ltd. is proposing to export up to 10.3 billion cubic metres (365 billion cubic feet) of natural gas to Ocean State Power via Niagara Falls, Ontario over a 20.5-year period, commencing May 1, 1989. Volumes purchased by Ocean State Power would be used to fire an electrical generating plant to be built in Burrillville, Rhode Island.

In Canada, the gas would be carried by NOVA, An Alberta Corporation, and TransCanada PipeLines Ltd. In the United States, the gas would be transported by Tennessee Gas Transmission Co.

The locations and dates of the Board's hearings into these applications will be announced at a later date.

- 30 -

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News Release

National Energy Board
Ottawa, Canada, K1A 0E5

86/81
FOR IMMEDIATE RELEASE
November 26, 1986

ALBERTA NORTHEAST GAS FILES APPLICATIONS WITH NEB

OTTAWA - Alberta Northeast Gas Ltd. in joint applications with each of TransCanada PipeLines Ltd., ProGas Ltd., ATCOR Ltd., and AEC Oil and Gas Co. has asked the National Energy Board to consolidate and extend three existing natural gas export licences and to issue new licences for exports to the northeastern United States.

In their applications dated November 14, 1986, the companies are seeking the Board's approval to export some 61 billion cubic metres (2.1 trillion cubic feet) of natural gas to 19 gas distribution companies located in the New England, New York and New Jersey market areas. Exports would be for a 15-year period, starting November 1, 1988. At present, 31 billion cubic metres (1.1 trillion cubic feet) of the total volume are authorized for export under licences GL-84, GL-85 and GL-88 currently held by TransCanada.

In Canada, the gas would be carried to the Alberta/Saskatchewan border by NOVA, An Alberta Corporation, and to the international border near Niagara Falls and Iroquois, Ontario by TransCanada. An application by TransCanada for approval of additional facilities, including a pipeline to transmit the gas from Iroquois to the international border, is expected to be filed with the National Energy Board at a later date. The estimated cost of these and other required facilities is $Can. 244 million (1986$).

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Canada

In the United States, volumes delivered at Iroquois, Ontario would be transported to market over facilities to be built by Iroquois Gas Transmission System. Volumes delivered at Niagara Falls, Ontario would be carried by Tennessee Gas Pipeline Co.

The applications are available for viewing in the Board's library in Ottawa.

The Board will be holding a public hearing on these applications at a date to be announced later.

- 30 -

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